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10/815,791	04/02/2004	Cristian M. Neculescu	02734-0388-03	9925

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PATENT GROUP GA030-43
GEORGIA-PACIFIC LLC
133 PEACHTREE STREET, N.E.
ATLANTA, GA 30303-1847

EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
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1791

MAIL DATE	DELIVERY MODE
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04/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/815,791

Applicant(s)

NECULESCU ET AL.

Examiner

Jeff Wollschlager

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 87-95 and 100-118 is/are pending in the application.
- 4a) Of the above claim(s) 87-95 and 109 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 100-108 and 110-118 is/are rejected.
- 7) ☒ Claim(s) 110 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/9/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 23, 2008 has been entered.

Response to Amendment

Applicant's amendment to the claims filed January 23, 2008 has been entered. Claim 108 is currently amended. Claims 110-118 are new. Claims 87-95 and 109 remain withdrawn from further consideration. Claims 1-86 and 96-99 have been canceled. Claims 100-108 and 110-118 are under examination.

Claim Objections

Claim 110 is objected to because of the following informalities: Claim 110 labels its first step as step "c" and its second step as step "d". For the sake of consistency and clarity the first step would be more properly labeled step "a" and the second step labeled step "b". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 100, 101, 108, and 110-112 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosen (US 5,423,160).

Regarding claims 108 and 110, Rosen teach a method of producing a sterile shaped container comprising extruding a web/sheet (Abstract; col. 2, lines 7-26) of propylene homopolymer or ethylene/propylene copolymer (col. 2, lines 26-35) and a filler such as mica (col. 2, lines 35-43). The sheet/web is thermoformed at a temperature of about 190 °C/374 °F (col. 2, lines 15). Rosen also teaches that thermoforming the material within the range of 110 °C - 160 °C (230-320 °F) is conventional in the art (col. 1, lines 12-52). Rosen teach that the hot web/sheet is sucked or drawn into the evacuated cavities into abutment against the walls of the cavity during the thermoforming operation (col. 3, lines 1-27). As to the limitation directed to the micronodular surface, the examiner submits that as set forth in the original disclosure (see page 17) thermoforming a polymeric sheet having mica as claimed intrinsically yields a product having a "micronodular surface". As such, when Rosen teaches thermoforming the same claimed materials in the same claimed manner, a micronodular surface is necessarily formed. Further, the examiner notes that Rosen specifically makes mention of mica in a relatively short list of five materials deemed by Rosen to be worthy of mention by name.

As to claims 100 and 111, Rosen employs vacuum to thermoform the article (col. 3, lines 1-27).

As to claims 101 and 112, Rosen vacuum forms the article in a mold (col. 3, lines 1-27). Further, Rosen employs the same preferred female configuration set forth in the original disclosure (page 17). As such, the sheet is thermoformed and intrinsically yields a micronodular surface.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 100-108 and 110-118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (US 5,439,628) in view of Mitsuno et al. (EP 0 243 206) and either of Watkins et al. (US 5,514,315) or Kojimoto et al. (US 4,248,651).

Regarding claims 108 and 110, Huang teaches the basic claimed process comprising thermoforming (col. 8, lines 1-5) a filled polypropylene sheet to produce a container wherein the

container has a rough/coarse surface because of the filler particles effusing from the surface (col. 7, line 35- col. 8, line 5 and col. 6, lines 25-30). The filled sheet is extruded and calendered prior to the additional processing step of forming the articles, such as forming containers by thermoforming (col. 8, lines 53-62). Huang discloses mica as a suitable filler in a relatively short list of fillers, but only exemplifies talc or calcium carbonate (col. 6, lines 24-45).

However, Mitsuno et al. disclose a polypropylene (page 3, lines 7-10) filled composition which provides improved properties (page 2, lines 48-51) wherein talc and/or mica alone or together are the employed fillers (page 3, lines 54-61) and the composition is used in various molding applications (col. 4, lines 52-55). Further, Mitsuno et al. appear to show their best physical property results, such as heat deformation temperature and adhesive strength, when employing mica and talc together (examples 19-22; Table 5).

Additionally, Huang does not disclose the temperature at which thermoforming is performed. However, Watkins et al. disclose thermoforming a polypropylene sheet at about 340 °F (col. 3, lines 12-15); and Kojimoto et al. disclose thermoforming a polypropylene composite at about 150 °C/302 °F (col. 3, lines 35-48; col. 4, lines 29-41).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed mica as a filler in the method disclosed by Huang, as suggested by Mitsuno, for the purpose of producing a desired product with improved physical properties. It is further noted that Mitsuno et al., in addition to Huang, suggest that mica and talc are equivalent fillers suitable for the same purpose.

Further, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have optimized the thermoforming temperature to a temperature between the glass transition temperature and the melting point as is implicit in the

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term "thermoform" itself and as is demonstrated by each of Watkins et al. and Kojimoto et al. in their polypropylene thermoforming processes.

Finally, the examiner notes that the combination does not expressly teach the container has all the same claimed physical properties and effects. However, the combination teaches all claimed process steps, and employs all the claimed materials in the same claimed manner. As such, the claimed physical properties and effects are necessarily realized. This conclusion is further supported by the original disclosure (see page 17).

As to claims 100, 101, 111 and 112, Huang discloses thermoforming (col. 8, lines 1-5) in general and Watkins et al. disclose a female vacuum forming method (Figure 3; col. 3, lines 14-49).

As to claims 102-107 and 113-118, Huang employs pre-blended/admixed titanium dioxide (Example 1) and polyvinylidene fluoride processing aids (col. 7, lines 1-22). Additionally, Huang teach silanes are suitable for high level of filler loading to improve dispersion and compatibility (col. 6, lines 43-45).

Claims 102-107 and 113-118 are rejected under 35 U.S.C. 103(a) as being obvious over Rosen (US 5,423,160), as applied to claims 100, 101, 108 and 110-112 above, in view of Huang (US 5,439,628).

As to claims 102-107 and 113-118, Rosen teaches the method set forth above. Rosen does not teach employment of the claimed additives. However, Huang teaches that in the art of forming filled polypropylene articles suitable for thermoforming a variety of additives are routinely employed (col. 4, lines 33-37). These additives include titanium dioxide (Example 1), polyvinylidene fluoride processing aids (col. 7, lines 1-22), antistatic agents (Table 1), and silane coatings (col. 6, lines 43-45).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the teaching of Rosen and to have employed conventional additives such as those disclosed by Huang for the purpose of improving and controlling the processability, appearance (e.g. color), and properties of the article to be produced, as is routinely practiced in the art.

Claims 100-103, 105-108, 110-114 and 116-118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al. (US 5,100,930) in view of Simon (US 5,300,747) and Rosen (US 5,423,160).

Regarding claims 108 and 110, Fukui et al. teach a method of producing a food container having a low level of offensive odor that is suitable for use in microwave ovens (Abstract; col. 1, lines 10-32). Fukui et al. employ a polyolefin based resin such as polypropylene (col. 2, lines 50-60) and an inorganic filler, of which, mica is preferable (col. 3, lines 1-3). Fukui et al. do state that talc is most desirable. Fukui et al. extrude a sheet of the material and subsequently thermoform it into the desired container (col. 6, lines 3-16). Fukui et al. do not teach the claimed thermoforming temperature.

However, Simon teach a method of forming a microwave heating container wherein mica is added due to its dielectric abilities (col. 2, lines 45-60) and Rosen teaches that thermoforming polyolefin based sheets, such as polypropylene, for food containers is conventionally performed within the range of 110 °C - 160 °C (230-320 °F) and discloses a method allowing for thermoforming at temperatures of about 190 °C (374 °F).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fukui et al. and to have thermoformed the sheet at the temperatures disclosed by Rosen and to have specifically

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employed mica as the filler, as suggested by Simon, for the purpose of effectively thermoforming the food container while imparting additional properties suitable for utilizing the container in a microwave oven. As to the claimed micronodular surface, the examiner submits the combination employs the same claimed materials in the same claimed manner. As such, the same claimed effects and physical properties would be realized by the practice of the combined method. This conclusion is further supported by the original disclosure (see page 17).

As to claims 100, 101, 111 and 112, Fukui et al. generally disclose thermoforming. Additionally, Rosen provide specifics of a vacuum thermoforming process (col. 3, lines 7-27).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fukui et al. and to have employed the thermoforming shaping equipment as set forth by Rosen since Rosen suggests such equipment is suitable for thermoforming food containers.

As to claims 102, 103, 105-107, 113, 114 and 116-118, Fukui et al. employ various additives such as antistatic agents (Abstract); waxy slip agents (col. 4, lines 33-39), and titania/titanium dioxide pigments (col. 5, lines 62-66).

Claims 104 and 115 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al. (US 5,100,930) in view of Simon (US 5,300,747) and Rosen (US 5,423,160), as applied to claims 100-103, 105-108, 110-114 and 116-118 above in view of Reinforcements (nonfibrous); Modern Plastics, July 1979, pages 45-46, previously of record.

As to claims 104 and 115, the combination teaches the method set forth above. Fukui et al. do not teach employment of a silane coupling agent. However, Reinforcements teaches that

silane reinforcement agents increase strength, stiffness and heat distortion in resin reinforced articles (paragraphs 4 and 5, page 45).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fukui et al. and to have employed a silane coupling agent as suggested by Reinforcements for the purpose of increasing strength and resistance to heat distortion (paragraphs 4 and 5, page 45)

Response to Arguments

Applicant's arguments filed January 23, 2008 regarding the Huang reference have been fully considered, but they are not persuasive. Additionally, the examiner has provided alternative grounds of rejection in an effort to expedite prosecution of this application.

Regarding Huang, applicant argues that the rough and coarse surface of Huang is produced during the formation of the sheet of material and does not disclose the coarse and rough surface is present in the thermoformed container. Applicant argues that one would expect the roughness or coarseness disclosed by Huang to be lost during the thermoforming process.

This argument is not persuasive. Initially, the examiner notes that thermoforming does not melt the sheet of material but merely softens the sheet. In other words, the properties of the material are not expected to change substantially. Further, the examiner notes that Huang makes an effort to explicitly point out that the sheet has the rough and coarse appearance of paper (col. 7, lines 35-54) and that the sheet serves as a wood pulp paper replacement (col. 4, lines 61-68). Huang lists one of the suitable products as a thermoformed food container (col. 7, lines 55-col. 8, lines 12; col. 4, lines 63-68). Further still, the combination of Huang in view of the secondary references teaches employment of polypropylene and mica and further teaches

that thermoforming polypropylene sheets at temperatures greater than 265 °F is conventional. As such, the combination employs the same claimed materials in the same claimed process in the same claimed manner. As such, and as supported by the original disclosure (page 17), the combination would realize the same claimed effects and physical properties.

Additionally, applicant argues against the Nakazima reference. The examiner notes that the Nakazima reference has been withdrawn as a result of the examiner overlooking in the previous office action that Huang discloses employment of silanes. In other words, the Nakazima reference is no longer necessary to present a *prima facie* case over claim 104. However, the examiner submits that Nakazima is combinable with Huang and that the combination set forth in the previous office action was not to modify Nakazima, but to modify Huang with the teaching of Nakazima. Said differently, applicant's argument appears to suggest the rejection was intended to modify Nakazima. However, this was not the case. As such, the examiner submits that one having ordinary skill would have been motivated to employ silane coupling agents as suggested by Nakazima in the method of Huang for the reasons previously set forth.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W./

Examiner, Art Unit 1791

April 14, 2008

/Monica A Huson/

Primary Examiner, Art Unit 1791